

SIXPENCE

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# AMATEUR RADIO

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# AMATEUR-RADIO

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## SHORT-WAVE SERVICE INTERRUPTIONS.

-- Time Lost Through Ionosphere Storms --

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The Short radio waves are the most useful for communicating over great distances because they travel with relatively little loss from transmitter to receiver by way of the refracting layers of the ionosphere, and so escape the effect of ground absorption. Successful communication is however, dependent upon the existence of normal conditions in the ionosphere layers. Normal changes which occur there are taken account of by the changing of the transmitter frequency at suitable intervals. There are also certain abnormal occurrences such as sudden ionosphere disturbances and ionosphere storms which may cause interruptions.

Sudden ionosphere disturbances usually do not last longer than about 1 1/2 hours, but an ionosphere storm may last ten days or more, so that it can be regarded as the principal cause of service interruptions.

Examination of statistics shows that there were 57 ionosphere storms during 1940 and of these 18 were probably severe enough to cause deterioration in reception in certain parts of the world even when using elaborate receiving equipment. Actually, receiving conditions could be said to be normal on only about 80% of the total days of the year. Of course, not all SW routes are affected by all ionosphere storms so it is probably that only in the worst cases was reception affected for as much as 20% of the total time. Signal paths running in southerly directions, for example, would be affected considerably less than this. March was the month with the greatest amount of disturbance.

The year 1940 was slightly better year than 1939, which may have been due to the fact that there was less sunspot activity in 1940. It is almost certain that the agency which causes the ionosphere storm is an omission from the sun. In addition to causing ionosphere disturbances, this omission often causes abnormal fluctuations in the terrestrial magnetic field.

The general effect of an ionosphere storm is to cause a

disturbance and afterwards an expansion in the ionosphere layers, so that the amount of ionisation per cent of space is reduced. Thus the radio wave does not encounter sufficient ionisation to effect refraction, and so it passes right through the ionosphere and on into space.

If the transmitting frequency were lowered when the layer ionisation were reduced, refraction would again take place, but it has been shown that in severe cases a reduction in frequency of about 30% would be necessary. Owing to the fact that the lower layers of the ionosphere are only slightly affected by a storm, lowering the frequency would also have the effect of increasing the absorption to which the wave is subject, because the main source of absorption is in the lower layers. Thus whilst lowering the frequency would improve the refraction in the upper layers, the signals could not be so strong as on normal days, because of the incidental increase in lower layer absorption at the lower frequency.

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The following is part of a letter received from Eric Trebilcock, VK5TK:-

Well, here I am in VK4. Was in Salamau, N.G. Oct 40-Jan 42. Was blitzed there Jan 21st., blasted out into jungle for seven days trek in the worlds worst jungle up to 7,000 feet from sea level. Finished up at an inland joint to get two more hefty bombings. Was there a week when a Moth aircraft rescued me and flew me across enemy occupied skies to the southern coast where I saw much evidence of a visit from the enemy two hours before. Thence by air to somewhere in Queensland across 800 miles of ocean to safety.

January 21st to February 5th was the most hectic of my life. Three times bombed without being able to give back some curry. Saw mates killed etc. (I was one of the lucky ones.)

Did five weeks at Townsville radio thence to here, where I am more or less permanently (??) put.

• The YL came from Clovelly - we now are "OM-XYL".

This is as far south as the Dept. have let me get so far -- lord knows when I'll see Sydney, let alone my old Adelaide (hi!). I tried to join the R.A.A.F. nearly three years ago - ditto A.I.F. Got wiped off eos of my most essential job hi! Nowadays am prevented by law from joining up. My dreams of G-VE and D remain wishful dreams.

73's

Eric Treb. VK5TK.

## THE MIRROPHONE

In a recent issue of the Wireless World a description is given of the Mirrophone and the following information has been taken from the article mentioned.

As most readers will know there are three main methods of recording sound, mechanically on wax; photographically on film and magnetically on steel wire or tape. The last has not achieved the wide popularity of the other methods, in spite of the advantage it offers as compared with most other systems--of immediate play back. Unlike the film or the commercial wax recording the steel tape requires no processing and retains its impressions almost indefinitely.

Thanks mainly to this feature of immediate play-back, a suitably designed magnetic recorder would appear to have special advantages for certain specialised uses, and it is not surprising to learn that a compact unit, combining provision for recording and immediate play-back has recently been produced. The Mirrophone, as it is called, employs the normal principles of magnetic recording and uses a steel tape which, as compared with a wire, can easily be prevented from twisting, and permits of transverse recording.

Housed in a small cabinet is the recording-reproducing unit, an amplifier and loud speaker. Associated with this unit is a high-fidelity crystal microphone. The thin narrow tape on which the recordings are made is mounted on drums which rotate to draw the tape between the poles of the recording magnet. To allow the tape to repeat without rewinding, its ends are welded together to form an endless belt. The material of the tape is a special magnetic alloy recently developed by the Bell Telephone Laboratories.

In reproduction and recording magnet serves as the pick-up device. These magnets are removable with plug in connections. The dynamic loud speaker is supplied by a two stage amplifier which develops exceptionally high gain. An acoustic chamber encloses the back of the speaker. Its field coil also serves as a smoothing choke for the amplifier anode current supply.

Alternating current from any normal source of supply operates the Mirrophone. A volume control regulates the intensity of the recording or the reproducing currents; and an electronic volume indicator shows when the level is correct for recording. To indicate the length of the recording there is a movable pointer which makes one complete revolution per minute and can be reset at any time.

A record once made can be reproduced as often as desired and kept indefinitely or until the switch is again thrown to the recording position. Doing so automatically clears the tape as it passes the polarising magnet and prepares it for a new record. The switch

also has a stand-by position which leaves the tape running, but disconnects the erasing, recording and reproducing units. An output jack permits connection to an external loud speaker or another recording machine when permanent records are wanted.

Best quality recordings are obtained when the speaker is close to the microphone, but the results are entirely satisfactory from greater distances. Group conversation can be picked up when the speakers are several feet away. Intelligible recordings have been made in large auditoriums with the sound source many feet from the microphone. On the other hand, whispered words can be reproduced loud enough to be heard by all present in a large auditorium.

In the Mirrophone, instructors in voice training have an effective new tool. Public speaking classes and music schools should find it helpful in developing good diction and correcting faulty technique in the rendition of vocal and instrumental music, for it has the great advantage of permitting a student to hear his own efforts as others hear them and to listen critically to the faults which his teacher wishes to correct.

As a lecture demonstration for talks at expositions and conferences, it has the advantage of being able to reproduce recorded speech immediately and of preparing itself automatically for a new record. The Mirrophone is also effective aid in teaching the correct pronunciation of foreign languages. For the first time those interested in cultivating the voice and studying instrumental music have in the Mirrophone the opportunity of critically reviewing and surveying their own performances without any appreciable time-lag.

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#### SLOUGH HATS and FORAGE CAPS

Well, well....I nearly made a mistake and admitted something, forgetting that these days one admits nothing....at once. Hi! So, now, where are those paragraphs about what the VK Hams did, Overseas?????. There being roughly 2,000 hams in VK I expect 200 letters in the next couple of months. Meantime, "here is the News"....

At VK3-RAAF Hq. receiving staff officer in charge is Jim Martin, and also there is Max Cumming 3XN. Max is just back from Singapore and is one of my prospective reporters....I hope. I gather he had a "nice" interesting time. He was with 21 Squadron and was bombed daily, from the first day until he left...they must have known he was a Ham Hi. He was operator in a mobile

tender attached to the squadron and they kept the gear in one piece all the way back to Singapore. On the first day one hit their sleeping quarters....the lads luckily being in their slit trench....but all 3XN's gear disappeared plus a brand new radio he had just purchased....hope they have a War Damage Commission in Malaya, om....call it a HRO if they have, HI. Finally the Squadron reached Kuala Lumpur, without any planes to fly with, so Max left the Radio truck and with some of the boys grabbed a car left behind, and with a HMV Console to keep the rear down, drove back to Sombawang in style. After doing a bit of fighter control on loan to another squadron they were ordered out to Sumatra about a week before the final battle. While in the port prior to sailing the Japs staged a "blitz" and sunk the ship in front, and the ship behind theirs. Arriving in Sumatra, there were no planes to fly, so they left for home, just a couple of days before the Japs landed paratroops on the dromo.

Another welcome returner to VK3 was Staff Sergeant Jim Hourigan 3SG. Jim returned from the Middle East and has told some very interesting stories that as pertains to hams make ones mouth water. The Radio of all descriptions lying around Tobruk when the Aussies drove out the Axis forces was nobody's business...what a pity it was so far from home. Jim was with the Field Workshops and saw a good deal of all that happened in Libya. His comparisons of the gear used by English, Americans, Italians and Huns are very interesting. How about an article on it, om. By the way 3SG is thought to be in VK2, and if so we would all like to see him.... how about it, om?

From what 3XN says practically all the Australians with the R.A.A.F. got out of Malaya and Java, but those attached to R.A.F. units were not so fortunate. Among these besides 2HZ, were F/O Arthur Finkler 3ZV, and F/O Roy Frowse 3XS. Anybody know of any others?

sKQ has been on a Mine Sweeper for some time, but is now back at an R.A.N. W/T Station in Melbourne. George was married just before Xmas. At the rate they are getting married, there won't be any single Hams on the air after the War, HI. Motto is, buy your gear beforehand, oms.

in VK3

Out at R.A.A.F. Station/there seems to be the "usual" ham gathering.

In charge of station signals is 3WH....in charge of the Xmitters is 2AGL...the Instructional Staff contains F/Sargt. 3DV and Sergeants 3BG, 3YS, 3UG and 5LK. 7RZ is also there as L.A.C. Trainee W.A.G. and 3AB is AGI Trainee Op.....I hope you latter two got "all the dope" from the galaxy of Bandon above. HI.

Over the page here at 2YC and that is all I am allowed these days of "rationing." But just one more remark....just in case....

"if anybody says to you I have news left over and that they sent me some....well, there is a bar on, and so the statement is neither denied or confirmed from SH and FC HQ as they say in better communiques than mine. And that's what I thought of just at the beginning.

ZYC.

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# ON ACTIVE SERVICE

Herewith a list of Victorian Amateurs on Active Service compiled from Cards returned to Federal Headquarters. If you are on Service and your name does/appear on this list, kindly furnish full particulars to Federal Secretary, 21 Tunstall Avenue, Kingsford, N.S.W. as soon as possible.

## R.A.A.F.

A.C.1	G.M. Hull	VK3ZS	Corporal	P.J. Anderson	VK3PA
L.A.C.	J. Stevens	VK3ZK	Ft. Sgt.	G. Tomplaton	VK3OM
A.C.1.	E.H. Martin	VK3ZF	A.C.1.	G. Daniel	VK3NX
Sergeant	F.G. Bail	VK3YS	A.C.1.	A.H. Nicholls	VK3NI
P.O.	G.C. Douglas	VK3YK	A.C.1	M. Campbell	VK3MR
A.C.1.	F.W. Hand	VK3YH	Sq'd. Ldr.	R.Cunningham	VK3ML
Sergeant	L.W. Johnson	VK3YF	P.O.	W.J. Scarff	VK3KO
L.A.C.	I. Stafford	VK3XB	L.A.C.	S.J. Wilcox	VK3YC
Ft. Serg.	R. Prowse	VK3XS	Ft. Sgt.	N.N. Tomplaton	VK3HG
A.C.1.	R.E. Humphreys	VK3WO	Sgt.	H.D. Ward	VK3HD
Sergeant	A.W. Chandler	VK3WH	Sergeant	H.G. Williamson	VK3GW
Ft. Lt.	W. Grenow	VK3WG	A.C.1.	W.A. Fulton	VK3FW
Corp.	W.D. Mathor	VK3WD	P.O.	J.K. McCarthy	VK3FX
Corp.	C.R. Nelson	VK3WC	A.C.1.	D.E. Briggs	VK3FU
Sergeant	A. Evans	VK3VQ	Sergeant	B.M. Ferguson	VK3FN
L.A.C.	N. Serpell	VK3UV	Sergeant	H.F. Huon	VK3FH
A.C.1.	V.L. Smith	VK3UR	Corporal	R.J. Bell	VK3EK
Sergeant	N. Foxcroft	VK3UQ	Sergeant	T. Baker	VK3DK
Corp.	D.A. Norman	VK3UC	Corporal	A.W. Giddings	VK3DG
A.C.1.	S.I. Zemanet	VK3SZ	P.O.	A.G. Brown	VK3CX
L.A.C.	B. McCubbin	VK3SO	A.C.2.	C.K. Shenfield	VK3CK
Sergeant	W.G. Sargent	VK3SC	Sq'd. Ldr.	J.W. Reddrop	VK3BN
P.O.	R.E. Jones	VK3RJ	Sgt.	Roth Jones	VK3BG
L.A.C.	J.G. Colley	VK3QZ	A.C.1	A.H. Miller	VK3AH
			A.C.1.	J.W. Leonard	VK3AB

ARMY.

Sergeant	P. Thornley	VK3FE	Lieut.	J.C. Hour	VK5OE
Lt. Col.	S.A. Embling	VK3DC	Gnrr.	J. Watson	VK3VQ
Corporal	G.C. Mikkolson	VK3XV	Private	J.W. Bellinger	VK3NK
Lieut.	J.K. Tutton	VK3ZC	Sglnm.	H.R. James	VK3LH
Lieut.	C. Woodward	VK3YO	Lieut.	D.R. Ayro	VK3EP
Lieut.	A.G. Weynton	VK3XU	Lieut.	T.P. Kirby	VK3MI
Sglnm.	R.R. McGregor	VK3XZ	Corporal	J.M. Mabbitt	VK3JG
Lieut. Col.	R.P. Whalley	VK3WZ	Sglnl.	R. Ford	VK3IQ
Lieut.	W.L. Nyo	VK3WL	Gnrr.	A.L. Maguire	VK3LO
Corporal	W. Dudman	VK3VY	Major	H.R. Hunter	VK3PV
Lieut.	A.H. Clyno	VK3VX	Sglnm.	D.G. Butt	VK3HT
Lieut.	V.J. Spicer	VK3VS	Major	P.E. Dunno	VK3HP
Lieut.	W.H. Laurenceo	VK3VH	Corporal	J. McCandlish	VK3HM
Private	B. McKenzie	VK3VF	Corporal	P.R. Gibson	VK3GX
Corporal	C.M. Barnett	VK3VD	Corporal	A.T. Gooby	VK3GV
W/O	W.T.B. Mitchell	VK3UM	Sergeant	A.J. Shilods	VK3GP
Private	C.A. Goddon	VK3TI	Major	G.E. Every	VK3GE
Sglnl.	L.S. Dixon	VK3TE	S/Sgt.	G.R. Carter	VK3GC
Sergeant	K.V. Scott	VK3SS	Sergeant	K.F. Chick	VK3FV
S/Sgt.	J.B. Hourigan	VK3SG	Corporal	G.L. Smith	VK3FR
Corporal	S.E. Widgory	VK3SE	Corporal	E. Foot	VK3EH
Sergeant	T.E. Evans	VK3RK	Captain	I.V. Miller	VK3EG
Sglnm.	W.J. Bridge	VK3QV	Corporal	G.B. Leneo	VK3DS
Capt.	R.K. Rosoblado	VK3QJ	Sglnl.	J.P. Brogen	VK3CG
Sglnl.	F. Rowley	VK3QF	Sergeant	G.S. Hnham	VK3BJ
Sglnm.	A.C. Zander	VK3PG	Lieut.	A.C. Lord	VK3BE
Sglnl.	C.I. Slade	VK3PZ			

NAVY.

W/T	L.C. Reabol	VK3HI	W/O	N.E. Gunter	VK3NG
Telugt.	H.B. White	VK3IE	2nd W/O	R.P. Voall	VK3PV
L/T	G.T. Borwell	VK3KQ	R.O.	F.W. Bond	VK3SQ
Sub. Lt.	D.J. Modloy	VK3MJ	R.O.	R.R. Thompson	VK3UF
W/T 3	K.G. Allen	VK3UH	R.O.	R.E. Slutskin	VK3SK
C.R.O.	L.C. Rogers	VK3LI			

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## D I V I S I O N A L   N O T E S

### - Federal Headquarters -

As mentioned several times in these notes, Federal Headquarters has been perturbed regarding the inactivity of Divisions in the smaller States, and several suggestions were made as to ways and means of keeping the members of the Divisions concerned in contact with the Institute. The main difficulty with the States, namely south Australia and Tasmania, was in maintaining continuity of Office Bearers due to Service calls.

Federal Headquarters, as at present constituted, consists of Amateurs engaged in Reserved Occupations and therefore continuity of Office Bearers can, to some degree, be guaranteed. It was decided to make available to the States concerned - should they so desire - the services of the Members of the Federal Executive. Tasmania has made a request that F.H.Q. take over their Members and this will be done by enrolling them in the Wireless Institute of Australia - a body whose Office-Bearers will be members of the Federal Executive.

As a result of the questionnaire forwarded to all Divisions regarding the Emergency Communication Network, it now transpires that VK6, VK7, VK4 and VK2 were all working along the same lines, but New South Wales was the only Division to inform F.H.Q. of their action. Whilst the actions of the various States in endeavoring to prove the worth of Amateur Radio in an Emergency is to be commended, it must be realised that if - through Federal Headquarters - each State is aware of the happenings in another, more impetus can be given to the movement. It is not a question of New South Wales or any other State's hams being on the air, it is really Australia, and every State should be prepared to help the other and forget that such things as prefix areas exist - - other than for purposes of identification.

Mr. Noel Gough, VK2NG, has been elected to the vacancy existing on the executive caused by VK2AJO's call up.

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NEW SOUTH WALES DIVISION.

The Monthly General Meeting of the Division was held as usual at Y.M.C.A. Buildings, Pitt Street, Sydney on Thursday 21st May.

The Chairman, in declaring the Meeting open extended a welcome to Bill Wishart VK4WT and Flight Sergeant Jim Perroz VK2PE.

The proposed amalgamation of the Monthly Bulletin with Amateur Radio was discussed, and members were of the opinion that the suggestions made by the Magazine Committee would have to be modified before the amalgamation took place. This matter was eventually left in the hands of a sub-committee.

The Chairman gave a short resume on "R-nomic Tuning" as set out in "Q.S.T." and all present decided to put it into operation in the first DX Contest after the war!

Members were informed of the progress made with the proposed Emergency Communications Network and it is anticipated that a decision will be made by the powers that be, very shortly.

Jim Perroz gave a short description of some of the Radio Gear he had seen in enemy planes shot down in the Middle East. Look out for a high power station after the war chaps. Contest committee's, please note!

Laurie Williams, GVL, now resident in VK2 elected to the State Council to fill VK2AJQ's vacancy.

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VICTORIAN DIVISION.

We are still wondering just what happened to the Gang from AHQ Signals who were supposed to turn up at the monthly meeting complete with some gear to give us a demonstration of Army technique. With rather a representative gathering present it was unfortunate that they couldn't get along. The reason for their absence, is at the moment, clouded maybe they just couldn't make it.

In their absence it looked as if the evening was going to fall rather flat until Jack Coulter VK3MV, who was on leave from the Navy told us of his experiences when they went into action on February 19th, somewhere in the north.

Following this, one of our American visitors W6ROO, who hails from San Francisco, filled up the rest of the evening with a particularly humorous account of how he got started in Amateur Radio, which kept the gathering in gales of laughter.

Other Ham visitors were W2NDJ, W2JFY and W6PBO who made his second appearance.

3EF...was down from the country and paid us a visit. Bert says that he is down on business, but may be a R.A.L.F. man before long.

3OJ...managed to get leave from his sigs unit in the hope of seeing some gear.

3JO... still runs the morse classes...Herb recently had the common complaint...'flu'...After viewing one of the class students, I still think Herb is in danger.

3KX...when seen recently looks very snappy in uniform...It's a wonder that the YF lets Ron out alone.

3NY...after having the parts of a set for over twelve months decided to build it but...the chassis didn't suit.

3GY...attended the meeting in the hopes of seeing the gear.

3VH...is reported to be back from overseas.

3IR...a member of the navy is also reported to be back.

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Meeting Night—First Tuesday in each month.

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The Division meets on the Third Thursday of each month at Y.M.C.A. Buildings, Pitt Street, Sydney, and an invitation is accorded to all Amateurs to be present.

**H A M S !**

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